

**Commonwealth of Kentucky**  
**Division for Air Quality**

**PERMIT APPLICATION SUMMARY FORM**

Completed by: Luis D. Fuentes

GENERAL INFORMATION:

Name:	Dow Corning Corporation
Address:	P.O. Box 310 Carrolton, Kentucky 41008
Date application received:	3/10/2008
SIC Code/SIC description:	2869, Industrial Organic Chemicals, Not Elsewhere Classified
Source ID:	21-041-00004
Source A.I. #:	703
Activity ID:	APE20080001
Permit:	V-07-005 R1

APPLICATION TYPE/PERMIT ACTIVITY:

<input type="checkbox"/> Initial issuance	<input type="checkbox"/> General permit
<input checked="" type="checkbox"/> Permit modification	<input type="checkbox"/> Conditional major
__Administrative	<input checked="" type="checkbox"/> Title V
<u>X</u> Minor	<input type="checkbox"/> Synthetic minor
_ Significant	<input type="checkbox"/> Operating
<input checked="" type="checkbox"/> Permit renewal	<input checked="" type="checkbox"/> Construction/operating

COMPLIANCE SUMMARY:

<input type="checkbox"/> Source is out of compliance	<input type="checkbox"/> Compliance schedule included
<input checked="" type="checkbox"/> Compliance certification signed	

APPLICABLE REQUIREMENTS LIST:

<input type="checkbox"/> NSR	<input type="checkbox"/> NSPS	<input checked="" type="checkbox"/> SIP
<input type="checkbox"/> PSD	<input checked="" type="checkbox"/> NESHAPS	<input type="checkbox"/> Other
<input type="checkbox"/> Netted out of PSD/NSR	<input checked="" type="checkbox"/> Not major modification per 401 KAR 51:001, 1(116)(b)	

MISCELLANEOUS:

- ☐ Acid rain source
- ☐ Source subject to 112(r)
- ☐ Source applied for federally enforceable emissions cap
- ☐ Source provided terms for alternative operating scenarios
- ☒ Source subject to a MACT standard
- ☐ Source requested case-by-case 112(g) or (j) determination
- ☐ Application proposes new control technology
- ☒ Certified by responsible official
- ☒ Diagrams or drawings included
- ☐ Confidential business information (CBI) submitted in application
- ☐ Pollution Prevention Measures
- ☐ Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

**Emissions Potential with addition of new furnace (V-07-005 R1)**

Pollutant	Actual (tpy)	Potential (tpy)
PM/PM <sub>10</sub>	0.032	28.7
SO <sub>2</sub>	0.11	654.7
NO <sub>x</sub>	0.39	230.6
CO	0.31	162.7
VOC	0.02	2672
Single HAPs (HCL)	0.0026	49.7
Single HAPs (Methanol)	-	40.9
Single HAPs (Methylene Chloride)	-	2200
Source wide HAPs	-	2373.6

**Emissions Potential of Existing Equipment (V-07-005)**

Pollutant	Actual (tpy)	Potential (tpy)
PM/PM <sub>10</sub>	0.032	28.2
SO <sub>2</sub>	0.11	654.6
NO <sub>x</sub>	0.39	223
CO	0.31	156.7
VOC	0.02	2670
Single HAPs (HCL)	0.0026	49.7
Single HAPs (Methanol)	-	40.9
Single HAPs (Methylene Chloride)	-	2200
Source wide HAPs	-	2373.6

**SOURCE DESCRIPTION:**

Dow Corning Corporation is a synthetic organic chemical manufacturing industry (SOCMI) falling under SIC code Group 28. The primary operation at the Carrollton plant consists of the manufacturing of silicone-based compounds. The primary raw materials at the plant are silicon, methanol, hydrochloric acid, and methyl chloride. The methanol and hydrochloric acid are combined to produce methyl chloride, which is then reacted with the silicon metal to produce various silicone-based chemicals.

The plant also includes several support activities such as Utilities, Waste Treatment, Quality Assurance Laboratories, Barge Unloading, Product Shipping and Research & Development (labs and pilot plants).

**MINOR PERMIT REVISION (V-07-005 R1):**

The source is adding four new pieces of equipment:

- 1) A furnace for the finishing building. The unit is natural gas fired, with a maximum rated capacity of 17 mmBtu/hr. The source wide potential emissions of volatile organic compounds (VOC), carbon monoxide (CO), particulate matter (PM), nitrogen oxides (NO<sub>x</sub>), and sulfur dioxide (SO<sub>2</sub>) will increase due to this addition.
- 2) A scrubber to vent railcars will be utilized once the bulk of the hydrogen chloride is removed. The scrubber will be used to control the residual hydrogen chloride that is vented from the railcars.
- 3) A silicon dust recovery unit will be used for truck unloading at the G-2 Grinder. All recovered particulates will be returned to the process as a raw material. This process is an insignificant activity.
- 4) An Octylamine storage tank for C2 process. This process is an insignificant activity.

The proposed emission unit FIN.04, Sign Thermal Dowtherm A Fluid Heater, was added to (2) Utility-Furnaces in Section B of the permit V-07-005 R1 with the corresponding limitations. In addition, (15) S-5 Loading Station was added to Section B of permit for the S-5 8001 Scrubber with requirements for compliance with the early reduction of hazardous air pollutants from the source, due to the emission of ethylene glycol from the S-5 Loading Station. The G-2 Silicon Dust Recovery Unit is listed as (G2.08), under Insignificant Activity number 14. in section C of the permit.

**EMISSIONS AND OPERATING CAPS DESCRIPTIONS:**

None.

**OPERATIONAL FLEXIBILITY:**

None.